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1920/21

*The Bulletin
of the University of
Minnesota*

*Northwest School and Experiment
Station*

Crookston, Minnesota

*Announcement for the Year
1920-1921*

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SCHOOL CALENDAR

1920-1921

1920

October	5	Tuesday	First term begins; organization of classes
November	25	Thursday	Thanksgiving Day
December	22	Wednesday	First term closes; Christmas recess begins

1921

January	3	Monday	Registration of new students
January	4	Tuesday	Second term begins; organization of classes
February	7-11	Week	Northwest School farmers' week
February	12	Saturday	Lincoln's Birthday; a holiday
March	30	Wednesday	Senior class day.
March	31	Thursday	Thirteenth annual commencement; alumni reunion
April	1	Friday	Second term closes
April	4-8	Week	Junior short course

THE NORTHWEST SCHOOL AND STATION

FACULTY

MARION LEROY BURTON, Ph.D., D.D., LL.D., President¹
WILLIAM WATTS FOLWELL, LL.D., President Emeritus
CYRUS NORTHROP, LL.D., President Emeritus
ROSCOE W. THATCHER, M.A., Dean of the Department of Agriculture

AT CROOKSTON

CONRAD G. SELVIG, M.A., Superintendent
ESTHER KROOG, Secretary
ARTHUR H. LARSON, B.S., Registrar and Librarian
ALICE E. GLISE, Matron
LULU CASSELMAN, R.N., School Nurse
CORA PAULSBERG, Accountant

AGRICULTURAL ENGINEERING

ARNOLD M. FOKER, Carpentry and Farm Engineering; Superintendent of Buildings
MILLARD PECK, B.S., Farm Motors
SEVERIN RISHOVD, Blacksmithing and Motors

AGRONOMY

ROBERT R. SMITH, B.S., Agronomy and Farm Management

EXTENSION

A. M. CHRISTENSEN, B.S., Home Projects and Pure Seed Specialist
ARTHUR J. KITTELSON, District Boys' and Girls' Club Leader

ANIMAL HUSBANDRY

WARD V. GOUSSEFF, B.S. in Animal Husbandry, Animal and Dairy Husbandry
C. EVERARD BROWN, Poultry and Extension in Poultry

HOME ECONOMICS

HAZEL ROCKWOOD, B.S., Domestic Science and Art, Preceptress
CASSIE BALL, B.S., Dressmaking

HORTICULTURE

THOMAS M. MCCALL, B.S.A., Botany and Horticulture

MUSIC

LOUISE PEDERSON, B.M., Music
ALFRED C. HOWE, Band Director

¹ Resigned July 1, 1920.

ACADEMIC SUBJECTS

JELMER P. BENGTON, Mathematics and Civics, Preceptor
ARTHUR H. LARSON, B.S., Advanced Subjects and Debating, Preceptor
MARGARET FRANCES BURNS, B.A., English and Public Speaking
ELEANOR BRUEM, Business Subjects

COMMITTEES FOR 1919-1920

Catalog—Registrar and heads of departments

School Schedule—Superintendent SELVIG, BENGTON, BURNS, LARSON,
PEDERSON, ROCKWOOD

School and Station Service—SMITH, BROWN, CHRISTENSEN, FOKER, GOUS-
SEFF

Athletics—McCALL, BALL, BRUEM, FOKER, PECK

Students' Work—BENGTON, BURNS, LARSON, McCALL, ROCKWOOD

GENERAL INFORMATION

TIME OF OPENING

The Northwest School of Agriculture opens October 5, 1920, and closes April 1, 1921. The fall term closes December 22, 1920, and the winter term begins Tuesday, January 4, 1921.

Registration at the beginning of the second term will begin Monday, January 3, 1921, and should be completed by Tuesday, January 4, 1921. All students enrolled during the fall term who expect to return must register for the winter term before they leave for their holiday vacation. All former students entering later than January 11 will be charged a special fee of twenty-five cents a day for each day's delay in registering, unless prevented by illness from entering on time.

Instruction begins promptly at the opening of each term, and students should be present from the first day until the close of the term.

INFORMATION

Students are advised to correspond with the superintendent of the school, C. G. Selvig, Experiment Farm, Crookston, Minnesota, and make the necessary arrangements for registration. The earlier the student comes to the school, the better the chance of getting a room at the institution. No student will be admitted late except upon presentation of a reasonable excuse.

LOCATION

The Northwest School of Agriculture is located at the Experiment Farm, one and one-half miles north of Crookston, Minnesota. The Northwest School of Agriculture is a part of the University of Minnesota and is governed by the University Board of Regents.

PURPOSE

The Northwest School of Agriculture was organized in 1906. It offers a practical course of study designed to fit young men and young women for successful farm life, and aims to give its students the necessary preparation for useful citizenship.

The work of the school aims to interpret for the young men and the young women from the farms, the life with which they are familiar. It gives reasons for the various farm operations, and makes a scientific basis for the proper management of the farm and the home.

COURSES OF STUDY

The course of study offered covers a wide range of subjects and is largely technical in character, but provision is made for some instruction in English and mathematics. The course is briefly outlined on pages 14 to 17. Instruction is given in the workshop, laboratories, barns, and fields, as well as in the classroom. The regular course for young men requires three winters of six months each for completion, and the regu-

lar course for young women requires three winters of six months each. Much of the work is taken in common by the young men and the young women. Some of the subjects, such as blacksmithing, carpentry, field work, handling grain and machinery, are taken by the young men, while the young women pursue courses in cooking, sewing, laundering, and household art. The methods of instruction tend to educate students toward the farm instead of away from it, to develop in them a love for farm life by showing them its possibilities. In this respect the school has been very successful, as nearly all of its graduates continue agricultural pursuits.

The Advanced Course aims to prepare graduates of the three-year course for college entrance.

HOW TO GET TO THE SCHOOL

Check all baggage to Crookston and bring checks to the school. A charge of ten cents is made by the school teams for transporting trunks at the opening of school. The same charge is made for the return of the baggage at the close of school, provided it is ready to go on the days assigned. A charge of twenty-five cents is made for transporting trunks at any other time.

On Monday and Tuesday, October 4 and 5, members of the school wearing lettered badges will be at the Great Northern and Northern Pacific Stations at Crookston to meet and direct new students.

HOME LIFE ON THE CAMPUS

The life of the student while attending the school is subject to supervision. Students residing in the school dormitories are not allowed to leave the grounds without permission. The home life of each student is carefully guarded and everything done to promote a healthful and moral atmosphere. The use of tobacco and spirituous liquors of all kind is strictly forbidden. No person will be admitted as a student who is known to have the cigaret habit. Any one not in accord with these restrictions and not willing to lend a hand toward a strong moral growth should not come to the School of Agriculture.

ADMISSION

Applicants who have completed a common-school course in English grammar, arithmetic, history of the United States, and geography will be admitted without examination, provided they can furnish the certificates of high schools or of county superintendents, and boys must have had six months' practical experience on a farm.

Applicants for admission who do not have state certificates or county diplomas showing completion of eighth-grade work should send to the Superintendent for certificates of admission which, when properly filled out by former teachers or superintendents, will be accepted in place of entrance examinations.

Students who are deficient in English grammar and arithmetic will be required to take special work in those subjects at the school before com-

pleting the course. Instructions regarding this special work will be given upon admission. All are urged to prepare in all common branches before applying for entrance.

Students more than twenty-one years of age who can not pursue the full course, either from lack of time or proper preparation, may make special arrangements for taking such subjects as will be most helpful to them. Students taking special work are required to take enough work to occupy their time while in school.

Parents are advised not to send pupils under sixteen years of age.

Students from city or grade schools will not be admitted before finishing eighth-grade work or until their former school records have been passed upon by the superintendent. These records must be presented at least three weeks prior to the opening of school.

State High School Board certificates are accepted for work in English, physiology, algebra, geometry, and civics, or credits of 75 per cent or more received on state teachers' examinations.

REQUIREMENTS FOR GRADUATION

1. *Boys' and girls' regular courses.* The completion of the prescribed course of study, including all of the required work and enough elective work to make a total of 150 credit hours for the boys and 144 for the girls.

2. Honorable standing in deportment.

3. An essay of not less than one thousand words upon a topic connected with agriculture or home economics, typewritten on paper of approved size for binding and filing in the library.

4. For young men, practical experience in farm work during each of the two summers that come between the freshman and senior years. Students will register for the study of some definite farm problem to be studied each summer and report at stated intervals during the summer the progress made. A satisfactory standing in this summer work, or its equivalent in practical work done at the school, is required for graduation. See home projects, page 25.

HOME PROJECTS AND FARM PRACTICE

Six of the 150 credits are earned by home projects. (See page 25.) If home projects are not elected, the work in farm and barn practice offered in the school course must be taken.

FEEES AND EXPENSES

The necessary expenses for the year do not exceed \$140. This amount does not include the cost of traveling and personal expenses.

Residents of Minnesota are charged an entrance fee of \$5 per school year; non-residents of the state, \$10.

The cost to the student for board, heat, light and laundry is the actual cost of maintaining the table (including management) and caring for the buildings. Each month's board is paid in advance. The sleeping rooms are each furnished with a bedstead, mattress, dressing bureau,

chairs, and table. They are all lighted by electric light and warmed by steam.

Each student should come provided with sheets, blankets, quilts, one bedspread, one pillow, three pillow cases, towels, napkins, comb, brushes, one glass tumbler, and one teaspoon.

Room reservations will be made in order of application up to the opening of school, upon receipt of a deposit of \$2. This deposit will be credited on the student's room rent at registration or refunded if the student does not enter. Request for such refund must be made at least one week before the opening of school. No room will be held after the first day of school unless previous arrangement has been made.

No deduction in charge for board is made for absences of less than three days. If students are compelled to be absent for that length of time, they are allowed half rates if they make arrangements before leaving.

Textbooks are furnished at a rental of \$2 per year to students who do not desire to purchase.

A gymnasium fee of 25 cents per term is charged all students.

Each student is required to pay for losses of, or damage to, apparatus used in practical work.

For the purpose of supplying, calcimining, and painting the sleeping-rooms, a reserve fund is created by assessing each one occupying them \$3 for the school year, or \$1.50 per term.

A competent nurse is kept on the ground to take care of the sick. To meet this expense each student pays \$2 per term.

A deposit of \$5 is required of each student as a guaranty for the return of all books and other articles borrowed. This deposit is not returned until the student severs his connection with the school.

On entering the school the student, if he is a resident of Minnesota, makes a payment of \$5 entrance fee; \$1 book rent and reading-room; \$22.75 to \$23 board and room; \$5 deposit; \$1.50 reserve fund; \$2 maintaining nurse; 25 cents, gymnasium fee; total, \$37.50 to \$37.75. In addition laboratory fees of \$1 for each per term will be charged for wood work, forge, motors, sewing, cooking, chemistry, corn studies, or dairying.

A rental fee of \$1 per month is charged for use of typewriters.

Each girl is required to provide herself with at least two large white aprons with bibs to wear while at work in the domestic science laboratory. A gymnasium suit is also required for work in gymnastics. Suitable material is black serge or mohair for bloomers and white Indian head for middy blouse.

The cost of the rooms in all of the dormitories has been graded in price according to the location of the room. The cost of room and board for a month varies from \$22.75 to \$23, depending on the location of the room, as some rooms are slightly more desirable than others. These prices include flat laundry only. Flat laundry includes bed linen, towels, and napkins. Cost of board and room, however, will be subject to change depending on cost of food stuffs and service. It may be possible to pro-

vide cafeteria service in the new dining-hall. Detailed information regarding this may be obtained upon application. Full information regarding available rooms also will be given on request.

The necessary expenses for the entire year are as follows:

First Term

Entrance fee.....	\$5.00	
Book rent.....	1.00	
Deposit (returned at close of term)	5.00	
Reserve fund.....	1.50	
Nurse fee.....	2.00	
Gymnasium fee.....	.25	
		<hr/>
		\$14.75
Board and room (including flat washing) at \$22.75 per month from October 5 to December 22, 1920.....		\$58.50
		<hr/>
Total expense first term.....		\$73.20

Second Term

Book rent.....	\$1.00	
Reserve fund.....	1.50	
Nurse fee.....	2.00	
Gymnasium fee.....	.25	
		<hr/>
		\$4.75
Board and room (including flat laundry) January 3 to April 1, 1921.....		\$66.76
		<hr/>
Total expense second term.....		\$71.51
Total expense first term.....		73.20
		<hr/>
		\$144.71
Less deposit returned at end of year.....		\$5.00
		<hr/>
		\$139.71

In addition there are laboratory fees of \$1 each per term for blacksmithing, carpentry, engineering, sewing, cooking, chemistry, and dairying, and additional fees for commercial studies and private lessons in music. These subjects are all elective. Therefore the total expense indicated above is a fair estimate of the students' necessary expenses while attending the school.

HOSPITAL FUND

The hospital fund will be expended under the general direction of the school nurse. This fund insures, for those contributing to it, the care of the school nurse and such medicines and materials as the nurse may use.

It does not provide medical treatment by physicians or fees of special nurses.

It does not provide hospital expenses of students rooming off the campus or away from the institution. Students rooming off the campus are not expected to contribute to this fund.

STUDENTS IN DORMITORIES

The preceptor of the School of Agriculture has charge of the boys in their dormitory and social life, and the preceptress has charge of the girls in their dormitory and social life, under such regulations as may be approved by the superintendent. Students are required to be correct in their habits and to observe pleasantly all directions for their government.

From 8:15 a.m. to 4:30 p.m. students not at recitation or chapel are expected to be in their rooms or in the library studying or reading; also after 7:30 in the evening. The rooms shall at all times be quiet, especially in the evening, so that no student may be disturbed.

ASSEMBLY

On each school day at 11:40 a.m., the students assemble in the chapel, a commodious room seating five hundred people. After the opening exercises, brief talks are given by the superintendent, members of the Faculty, or invited guests.

During the year the list of speakers includes prominent men, state and national officials, business men, particularly those connected with the agricultural industries, professional men, prominent clergymen of all denominations, educators from other institutions, and successful farmers. The addresses are of great interest and value to the students.

LECTURE COURSE

During the school year a lecture and entertainment course, consisting of lectures and musical programs, will be given at a low cost. It is hoped to provide high-grade lectures and programs which will furnish a pleasant relaxation from school work and be instructive as well.

A course of lectures on the following subjects will be given beginning the second week of each semester at the regular assembly period. All students will be expected to attend these lectures.

The Aim of the Northwest School. Superintendent.

How to Study. Head of Teachers' Training Department.

Use of Library. Head of English Department.

Personal Conduct. To be appointed.

Good Citizenship. Preceptor of boys' dormitory.

Value of an Education. Superintendent.

The following lectures on hygiene will be given to freshmen by the head of the Home Economics Department, or physical director of the school. All freshmen are required to attend these lectures.

General View on Health Problem

Diet

Dress

First Aid to Injured

Care of the Sick

Special lectures: Two, one for young men and one for young women.

STUDENTS' LITERARY SOCIETIES

Societies for the purpose of improvement in elocution and debate, and for obtaining instruction in the form of lectures give excellent opportunities for entertainment and culture. Practice in parliamentary procedure is given which will greatly benefit the students. Each student is expected to associate himself with one of these societies as early in his course as possible.

MUSICAL ORGANIZATIONS

A school band is maintained each year. A competent leader has charge of this work. A school orchestra, glee clubs, and quartets contribute greatly toward creating an interest in music.

STUDENTS' CHRISTIAN ASSOCIATIONS

Young Men's and Young Women's Christian Associations have been formed having for their objects social fellowship and moral and spiritual development. Bible classes will be held Sunday morning at 8:30. The associations are non-sectarian. Religious exercises are held at the school each Sunday evening at 7 o'clock. Various pastors and business men address the students at these meetings. The Christian Associations conduct the exercises and secure the speakers.

BUILDING AND EQUIPMENT

The school has seven brick buildings: the Kiehle Building, containing the offices, library, bookstore, gymnasium, and assembly room; Stephens Hall, containing sixty-five bedrooms; Senior Hall, with thirty rooms; Robertson Hall, with thirty-eight rooms; Home Economics Building, containing the kitchen, sewing-rooms, classrooms, model kitchen, and dining-room for serving meals; Owen Building, containing the dairy room, carpentry shop, farm machinery and cement workshop, blacksmith shop, stock-judging room, and drawing classrooms; and Hill Building, which gives adequate quarters for the work in agronomy, horticulture, botany, and agricultural science departments. A new dining-hall building costing \$100,000 will be ready for occupancy when school begins. The farm buildings, herds, and machinery are used to give the students the best current ideas regarding methods of farming.

LIBRARY AND READING-ROOM

The School of Agriculture library is being equipped to supply the needs of students. It contains books of general and technical literature, government reports, pamphlets, and bulletins. The general subject and author card index and the index of publications of the state experiment stations are always at the disposal of all students to aid them in locating the various sources of information which the library affords.

There are complete sets of encyclopedias and dictionaries and files of fifty popular and technical magazines and periodicals.

The librarian is always ready and glad to give whatever assistance she can to those doing reference work in connection with their classes.

All those wishing to read or study are made welcome and given whatever privileges the library can provide.

SCHOOL MUSEUM

A room has been fitted up in the Hill Building as a zoological museum and as an exhibit room for farm products and appliances. The school desires donations from friends of the institution.

SCHOLARSHIP AND LOAN FUNDS

The Northwest School of Agriculture considers itself very fortunate in being able to present the following scholarships and loan fund provisions. The donors have specified the purposes for which each may be used. The general purpose, however, is to enable the school to reach a larger number, to provide the means of encouraging many to acquire the training which the school offers, and to stimulate greater effort in school work.

AWARDS OF SCHOLARSHIPS

The Scandia-American Bank of Crookston Scholarship

Awarded for general diligence and greatest progress in school work during 1919-1920.

1. Martin Anderson, junior class, St. Vincent, \$75.
2. Hope Jensen, junior class, Clearbrook, \$50.
3. Carl Narveson, senior class, Twin Valley, honorable mention.
4. Maurice Bursheim, junior class, Winger, honorable mention.

The Crookston State Bank Scholarship

Awarded to freshman students for general diligence and greatest progress in school work during 1919-1920.

1. Rosalind Friday, Hawley, \$75.
2. Lloyd Ness, Ada, \$50.
3. Johanna Nabben, Thief River Falls, honorable mention.
4. Ava Gerstner, Fertile, honorable mention.

SCHOLARSHIPS FOR 1920-1921

The Scandia-American Bank of Crookston Scholarship

The Scandia-American Bank of Crookston offers a scholarship of \$125 during 1920-1921, to be awarded the student who is most diligent in his efforts to accomplish his work, and who shows the greatest progress during the year.

The Crookston Milling Company Scholarship

The Crookston Milling Company offers a scholarship of \$125 during 1920-1921, to be awarded the freshman student who is most diligent in his efforts to accomplish his work, and who shows the greatest progress during the year.

Class of 1917 Prize

The class of 1917 has provided \$140, the interest of which shall be awarded annually to the member of the Home Economics Society who wins first place in the farmers' club program contest.

STUDENT LOAN FUNDS

The Gilfillan Trust Fund

This fund may be used by students of the Northwest School of Agriculture in accordance with the action of the Board of Regents taken September 26, 1916. The regulations governing the administration of the income from the fund may be learned by addressing the superintendent of the Northwest School of Agriculture, Crookston, Minnesota.

Northwest School Loan Fund

Through the efforts of a committee of Crookston citizens a students' loan fund has been provided for the use of students at the Northwest School of Agriculture to supplement the above-mentioned fund. This committee will provide money for loans as needed. This money will be loaned to students at 6 per cent interest as a temporary loan. For information regarding this loan fund, address the Northwest School of Agriculture, Crookston, Minnesota.

Fairfax-Andover Social Club Loan Fund

The Fairfax-Andover Social Club (a farm club near Crookston) provided \$100 to be used as a students' loan fund. This money will be loaned to students at 6 per cent interest as a temporary loan.

CREDIT REGULATIONS REGARDING BOYS' THREE-YEAR COURSE

In addition to the required work of the term, students must elect enough work to make a total of not less than 23 or more than 26 credit hours. Exceptions may be allowed by the Committee on Students' Work.

Credit toward graduation will be allowed for work in debate, literary societies, school athletic teams, and other student activities on a basis to be determined by the Students' Work Committee.

One to four credits per term may be earned by approved work in instrumental or vocal music. A special fee will be charged for such courses. The same credit may be earned without the fee by membership in the orchestra by those who are competent for the work.

A class will not be maintained for less than six students.

CREDIT FOR HIGH-SCHOOL WORK

A graduate of an approved high-school course shall be allowed a total of 48 credits toward graduation.

A graduate of an approved high-school course who presents four units of work in agriculture shall be allowed 96 credits toward graduation.

For each four units of credit of approved high-school work presented on entrance, 12 credit hours shall be granted in the School of Agriculture, and 12 additional credit hours for each unit of agriculture offered.

Capital letters following the names of courses refer to descriptions given on pages 18 to 24.

COURSES OF STUDY

BOYS' THREE-YEAR COURSE

FIRST YEAR Required of All

<i>Fall Term</i>	<i>Spring Term</i>
Credit Hours	Credit Hours
5 English A	5 English A
5 Livestock* Poultry G	5 Livestock* Study Breeds A
5 Farm Dairying B	5 Farm Crops* Cereal Crops A
5 Farm Crops* Plant Life A	5 Arithmetic A* Personal Hygiene A
5 Arithmetic A* Personal Hygiene A	Gymnasium
5 Elective from the following:	5 Elective from the following:
<hr/>	<hr/>
25	25
5 Blacksmithing D*	5 Carpentry C*
5 Farm Motors B*	5 Industrial History B
5 Industrial Geography A	1-3 Summer Practicums
5 Music	1 Music

Two hours per week of military drill and two hours per week of gymnasium are required of all, but carry no credit. Band work may be substituted for military drill.

Students having a mark of pass plus on State Board certificates in arithmetic will be given five hours' credit in arithmetic.

*Will be offered both terms.

SECOND YEAR Required of All

<i>Fall Term</i>	<i>Spring Term</i>
Credit Hours	Credit Hours
5 English B	5 English B
5 Livestock Stock Feeding C	5 Livestock Stock Feeding C
5 Stock Judging D	5 Stock Judging D
5 Farm Crops	5 Farm Crops Elements of Soils C
5 Fruit and Vegetable Crops C	5 Farm Accounts E
5 Forage Crops B	Gymnasium
5 Gymnasium	5 Elective from the following:
5 Elective from the following:	<hr/>
<hr/>	25
25	5 Mechanical Drawing E*
5 Advanced Motors	5 Modern History C
5 Advanced Carpentry	1 Parliamentary Law
5 Business Forms	1-3 Summer Practicums
5 Ancient History C	1 Music
1 Music	

Two hours per week of military drill and two hours per week of gymnasium are required of all, but carry no credit. Band work may be substituted for military drill.

*Will be offered both terms.

THIRD YEAR
Required of All

<i>Fall Term</i>	<i>Spring Term</i>
Credit Hours	Credit Hours
5 English C	5 English C
5 Livestock	5 Livestock
5 Herd Management E	5 Livestock Business Management F
5 Farm Crops	5 Farm Crops
5 Forestry D	5 Plant Breeding E
5 Soil Management D	5 Farm Management F
5 Physics A	5 Civics and Farm Law
5 Gymnasium	5 Gymnasium
5 Elective from the following:	5 Elective from the following:
25	25
5 Elements of Business	5 Elements of Business
5 Typewriting	5 Typewriting
5 Stenography	5 Stenography
5 Letter Writing	5 Rural Sociology B
5 Rural Economics A	1 Music
1 Music	

Two hours per week of military drill and two hours per week of gymnasium are required of all, but carry no credit. Band work may be substituted for military drill.

HOME MAKERS' COURSE

Capital letters following the names of courses refer to descriptions given on pages 18 to 24.

FIRST YEAR
Required of All

<i>Fall Term</i>	<i>Winter Term</i>
Credit Hours	Credit Hours
5 English A	5 English A
3 Physiology and Public Health C	5 Arithmetic A*
3 Foods and Cookery A	2 Public Health C
4 Garment Making J	3 Foods and Cookery A
1 Drawing and Design N	4 Garment Making J
1 Music B	1 Music B
1 Social Training G	5 Physical Training
1 Physical Training	
6 Elective from the following:	9 Elective from the following:
24	24
<i>General and Agricultural Electives</i>	
2 Poultry C	5 Plant Life A†
5 Industrial Geography A	3 Farm Dairying B†
4 Special Music	5 Industrial History B
	5 Summer Practicum
	4 Special Music

*Required for students who do not have a pass plus in arithmetic on State Board certificates.

†Offered both terms.

Office Training Electives

- 1 Spelling E
- 1 Penmanship E
- 3 Business Forms

- 1 Spelling E
- 1 Penmanship E
- 3 Typewriting

SECOND YEAR
Required of All

Fall Term

Credit
Hours

- 5 English B
- 3 Foods and Cookery B
- 4 Textiles and Elementary Dress-making K
- 2 Home Nursing H
- 1 Music B
- Physical Training
- 9 Electives

24

Winter Term

Credit
Hours

- 5 English B
- 3 House Planning and Furnishing I
- 2 Home Nursing H
- 3 Dressmaking K
- 1 Drawing and Design O
- 1 Music B
- Physical Training
- 9 Electives

24

General and Agricultural Electives

- 5 Fruit and Vegetable Crops C
- 2 Laundering F
- 5 Ancient History C
- 4 Special Music

- 5 Mechanical Drawing G
- 1 Parliamentary Law E
- 5 Modern History C
- 4 Special Music

Office Training Electives

- 3 Stenography
- 3 Typewriting
- 2 Letter Writing

- 3 Stenography
- 3 Typewriting
- 2 Dictation

THIRD YEAR

Fall Term

Credit
Hours

- 5 English C
- 5 Physics A
- 3 Home Management D
- 1 Millinery L
- 1 Music B
- Physical Training
- 9 Electives

24

Winter Term

Credit
Hours

- 5 English C
- 4 Civics D
- 3 Home Management D
- 2 Dressmaking M
- 1 Music B
- Physical Training
- 9 Electives

24

General and Agricultural Electives

- 3 Farm Forestry D
- 2 Floriculture B
- 5 Rural Economics A
- 2 Household Accounts E
- 4 Special Music

- 2 Plant Breeding E
- 3 Farm Management F
- 5 Rural Sociology B
- 4 Special Music

Office Training Electives

- 3 Duplication and Mimeographing
- 2 Dictation
- 2 Comptometer Practice

- 3 Filing and Indexing
- 3 Commercial Law
- 1 Business Ethics

ADVANCED COURSE FOR GRADUATES OF THE SCHOOL OF AGRICULTURE

The work offered in this course is arranged to fit young men and women to enter the College of Agriculture, Forestry, and Home Economics. It will cover a period of six months, beginning and closing at the same time as the regular school classes. Students capable of carrying satisfactorily all the subjects required will be granted a certificate.

Upon the completion of two summers of supervised work in addition to this course, graduates will be admitted to the College of Agriculture, Forestry, and Home Economics.

OUTLINE OF COURSE

First Term

Credit
Hours

- 6 Elementary Algebra B
- 6 Plane Geometry C
- 6 English D
- 2 Farm Marketing C
- 6 English History F

Second Term

Credit
Hours

- 6 Elementary Algebra B
- 6 Plane Geometry C
- 6 English D
- 2 Farm Marketing C
- 6 Advanced United States History G

DESCRIPTION OF COURSES

AGRICULTURE

- A. CEREAL CROPS. A study of the classes of field crops with special study of the most important cereals, as to history, habits, varieties, planting, harvesting, storing, uses and values, pests, including insects, diseases, and weeds. SMITH.
- B. FORAGE CROPS. This course is devoted especially to the kinds, methods of storing, description and identification, methods of handling, uses, value, and adaptability of grasses and forage crops. All field crops studied from actual specimens in laboratory. SMITH.
- C. ELEMENTS OF SOILS. The principles of elementary chemistry and their applications most important to plant life. The chemical and physical properties of compounds common in water, air, soils, fertilizers, and foods. SMITH.
- D. SOILS MANAGEMENT. Consists of study of geology as related to soil formation; classification of soils; soil moisture and soil tillage; relation of these crops to each other in systematic rotation and in their relation to soil fertility. SMITH.
- E. FARM ACCOUNTS. Bookkeeping, for the farmer rather than for the merchant. Principle of debits and credits is same. Course aims to help farmer in keeping records that he may know where his profits and losses come from. BENGTSOON.
- F. FARM MANAGEMENT. Systems of farming; selection of farms; the planning of rotations suitable to the students' home farms and to farms operated under different systems. Cost of producing crops; marketing products; business methods applied to the farm. SMITH.

AGRICULTURAL ENGINEERING

- A. AGRICULTURAL PHYSICS. Nature of matter and force in application to draft, levers, and pulleys in farm and household machinery, lightning protection, supports in house and bridge building, principles of heating and ventilation; soil formation, heat, and moisture. BENGTSOON.
- B. FARM MOTORS. Handling, construction, and repair of stationary and traction gasoline engines. Practical work in repairing and running gasoline engines. Babbitting boxes and soldering taught to enable student to repair worn bearings, leaky gasoline tanks and pipes. PECK, RISHOV.
- C. CARPENTRY. Care and use of tools taught by means of practical farm problems; methods of sharpening tools; practical application of steel square; farm building construction, including foundation, framing, rafter cutting, estimating and selecting material. FOKER.

- D. **BLACKSMITHING.** Instruction is given in the management of the forge, in bending, shaping, and welding iron and steel, and tempering steel tools, thus familiarizing the student with operations necessary for blacksmith repair work on the farm. **FOKER.**
- E. **DRAWING.** Use of tools and value of drawings in designing buildings and machinery. Drawings of carpentry exercises and work from drawings in shop afford direct application. Students design dwellings, etc., estimating quantity of material, cost, etc. **FOKER.**

DAIRY AND ANIMAL HUSBANDRY

- A. **STUDY OF BREEDS.** Cattle, horses, sheep, and swine are studied as to origin, quality, breed characteristics, and general adaptation. The work is made practical by scoring and judging stock kept at Experiment Station and near-by farms. **GOUSSEFF.**
- B. **FARM DAIRYING.** A study of the principles and practice of producing dairy products, including a discussion on dairy barns, silos, herd management, milk production and testing, including record keeping. **GOUSSEFF.**
- C. **STOCK FEEDING.** The principles of feeding as applied to the production of horses, beef cattle, hogs, and sheep are taught. Instruction is given in compounding rations for the different classes of stock. **GOUSSEFF.**
- D. **STOCK JUDGING.** Instruction is given on types and breeds of livestock, and attention is called to desirable and undesirable qualities in each. Practice is given in judging animals. **GOUSSEFF.**
- E. **HERD MANAGEMENT.** Principles governing breeding and building up herds, with special reference to the value of pure-bred sires. Problems of sanitation and disease. Dressing and curing meats. Animals fitted and trimmed and cared for in competitive contests. **GOUSSEFF.**
- F. **LIVESTOCK BUSINESS MANAGEMENT.** This course comprises a study of breed associations, registration, pedigrees, advertising, sales and markets. **GOUSSEFF.**
- G. **FARM POULTRY.** The study of breeds; planning and arrangement of poultry houses; feeds and feeding; killing and dressing fowls. **BROWN.**

ENGLISH

- A. **FRESHMAN ENGLISH.** Oral and written composition with particular attention to sentence structure. Punctuation and spelling. Letter writing. Drills for the purpose of eliminating errors. The reading of simple classics to illustrate fable, allegory, parable, myth, and ballad. **BURNS.**

PUBLIC SPEAKING. One hour a week. Reading aloud, drilling upon articulation and enunciation, short talks on familiar subjects. Public programs to enable the students to learn to speak clearly and easily before an audience. BURNS.

DEBATING. One hour a week. Principles of argumentation, briefs, debates in class, in public programs, and in debating societies. LARSON.

- B. JUNIOR ENGLISH. Practical business English. Magore's text. Paragraph and methods of paragraph development. Narration, description, and exposition in oral and written composition. Study of good literature as basis for composition work, and means of increasing student's vocabulary. BURNS.

PUBLIC SPEAKING. Extemporaneous talks, longer discussions, and a little dramatic work. BURNS.

DEBATING. A development and a continuation of the first year. LARSON.

- C. SENIOR ENGLISH. Study of whole composition with reference to principles of unity, coherence, and emphasis. Exposition studied in oral and written composition work. Reading of best English writers with view of increasing students' appreciation of good literature. BURNS.

PUBLIC SPEAKING. The dramatization of scenes from literature studied, after-dinner speeches, and talks. BURNS.

- D. ADVANCED ENGLISH. Oral and written composition illustrative of forms of discourse and principles of composition previously learned. Study of the novel and the short story; the drama; the essay and the oration; narrative and lyrical poetry. BURNS.

- E. SPELLING AND PENMANSHIP. Practical drills closely related to work in other subjects aiming to give proficiency in every-day requirements. BRUEM.

INDUSTRIAL HISTORY AND CIVICS

- A. INDUSTRIAL GEOGRAPHY. Study of climate, rainfall, location, and other geographical conditions affecting the primary industries. LARSON.

- B. INDUSTRIAL AND MODERN HISTORY. A study of the growth of industry, commerce, labor, population, and agriculture in the United States. LARSON.

- C. ANCIENT AND MODERN HISTORY. A study of the world's history with particular emphasis placed on the development of institutions, states, industries, and organizations that have influenced the progress of civilization. LARSON.

- D. CIVICS AND FARM LAW. Legislative, judicial, and executive departments and their functions. School district, township, county, and

state government. National government is also considered. One hour per week is devoted to essentials of law relating to the farm. BENGTON.

- E. PARLIAMENTARY LAW. The essentials of parliamentary practice as necessary in conducting public meetings effectively. LARSON.
- F. ENGLISH HISTORY. A study of the political and social development of England. A study of history of English literature is included.
- G. ADVANCED UNITED STATES HISTORY. The political and industrial development of this nation. Special emphasis will be placed on territorial expansion, immigration, political parties, and conditions in industry.

RURAL ECONOMICS AND SOCIOLOGY

- A. RURAL ECONOMICS. Attention is given to the consideration of factors affecting agricultural production and farm products. SMITH.
- B. RURAL SOCIOLOGY. The problems of rural communities, of rural health and sanitation, and of rural social institutions will receive attention. SMITH.
- C. FARM MARKETING. Fundamentals in connection with the problems confronting the farmer to-day in disposing of his products. SELVIG.

HOME ECONOMICS

FOODS AND HOME MANAGEMENT

- A. FOODS AND COOKERY. Elementary cooking. Preparation and serving of the carbohydrate, fat, and protein foods; doughs and batters; beverages, desserts, and salads; special emphasis on bread making; meat cooking, and canning. ROCKWOOD.
- B. FOODS AND COOKERY. The aim of this course is to determine by experiments the fundamental scientific principles underlying and controlling cookery processes; cooking in large quantities; outlining menus, and determination of caloric value of foods. ROCKWOOD.
- C. PHYSIOLOGY AND PUBLIC HEALTH. Review of structure of human body; digestion, absorption, and metabolism of foods; fundamental principles of human nutrition. The general principles of public hygiene and sanitation are included. ROCKWOOD.
- D. HOME MANAGEMENT. Distribution of family income; purchasing supplies; planning and serving meals, relation of cost to income; sanitation and application in care of house; labor-saving devices. Students take full charge of a house for six weeks. ROCKWOOD.
- E. HOME ACCOUNTS. Thoro drill by keeping a year's account for a model household; attention to budget, cash paid out, cash received; farm products used in the household, and business forms. BRUEM.

- F. LAUNDERING. This course includes the care of laundry room and utensils, study of water, soap, starch, removal of stains, washing of woolen garments, ironing; also the principles of dry cleaning. ROCKWOOD.
- G. SOCIAL TRAINING. This course includes a series of lectures on proper speech, table etiqet, street etiqet and dress, also conversation and social correspondence. ROCKWOOD.
- H. HOME NURSING. Home care of the sick; sick-room etiqet; care of children; first aid in emergencies; preparation and serving of food for the sick. Practical work is given in assisting the regular school nurse. CASSELMAN.
- I. HOUSE PLANNING AND FURNISHING. Location, construction, and planning of farm houses; heating, lighting, ventilation, and equipping house; artistic and economical furnishing with work on cost and schemes of furnishing, floor and wall coverings, curtains and pictures for each room. ROCKWOOD.

CLOTHING

- J. ELEMENTARY GARMENT MAKING. Hand stitches as applied to simple under garments and household articles; middy blouse and wash dress are additional problems of this course. Care of sewing machines. Use of commercial patterns. BALL.
- K. TEXTILES AND ELEMENTARY DRESSMAKING. Making of wool dress; infant's layette; afternoon or informal party dresses. Study of silk and woolen fabrics and fibres, and tests for adulteration and substitution. BALL.
- L. MILLINERY. Study of design and color harmony in hats; alteration of frames; making and trimming of simple hats. BALL.
- M. DRESSMAKING. This course includes the more advanced problems as modeling on the dress form. Underwear and dress for graduation are made in this course. BALL.
- N. DRAWING AND DESIGN. This course treats of the fundamental principles in design and color harmony, with special emphasis upon design as expressed in clothing, house furnishing, and articles in common use. BALL.
- O. ADVANCED DRAWING AND DESIGN. This course is a continuation of Drawing and Design N by means of more advanced problems and illustrations, with special emphasis upon clothing design. ROCKWOOD.

MATHEMATICS

- A. ARITHMETIC. Drill for speed and accuracy; application of principles to every-day farm problems, as measurements of material, extension, capacity; marketing of grain, stock, and products; purchase of machinery and supplies; cash accounts, business forms, and interest. BENGTON.

- B. ALGEBRA. This work covers *First Course in Algebra*, by Hawkes-Lubby-Touton, or equivalent text, omitting ratio and proportion, graphical representation, and imaginaries. BENGTON.
- C. GEOMETRY. The course in Geometry covers Wentworth and Smith's *Geometry*, from Book I to Book VIII, or equivalent text, except the work in symmetry, maxima and minima. LARSON.

MILITARY DRILL

Under the provisions of the act of Congress of 1862 establishing the land grant colleges of the United States, instruction in military science and tactics is required to be given at all institutions which are its beneficiaries. For this purpose the United States Government furnishes the Department of Agriculture with the necessary arms and equipment. All male students of the freshman and junior classes not physically unfit, and not enrolled in the band, are required to attend military drill.

Military instruction is intended to be so conducted as to develop a soldier-like bearing and foster a spirit of gentlemanly courtesy, soldierly honor, and obedience to lawful authority, as well as to familiarize students with battalion maneuvers, guards, and the theoretical and practical use of firearms. PECK.

MUSIC

- A. PIANO AND VOCAL. Piano.—Instruction adapted to needs of each student. Technical exercises for development and control of the fingers, hands, and arms. Studies and compositions by best composers. A special fee is charged for this work. PEDERSON.
- VOICE. Exercise in breathing and tone placing, for relaxing the throat, for formation of vowels and consonants, and for sight reading. Songs by American and foreign composers are studied. This work also requires a special fee. PEDERSON.
- CHORUS WORK. A glee club, chorus, and quartets are organized during the year. Students with the best voices are admitted to these. No special fee is charged. PEDERSON.
- B. MUSIC. In the regular course of study, there is offered one hour a week in music each year, consisting of work in ear training, vocal development; sight reading and chorus; and appreciation of music. PEDERSON.

PHYSICAL TRAINING

The aim of this department is to maintain the health of the students, to give outdoor exercise and deep breathing, to stimulate functional activity, to give coördination and control, and to form right habits of living.

MEN

- A. PERSONAL HYGIENE. Importance of proper care of human body. Special attention is given to foods, water, air, narcotics, cleanliness, clothing, exercise, first aid to injured, care of sick, and care of special organs of body. BENGTON.

- B. GYMNASIUM. Required of all men not excused because of physical disability. Aims to inspire pupils with desire to reach and maintain physical efficiency. Calisthenics with dumb-bells, Indian clubs, etc. Games or running follow light apparatus work. LARSON.

WOMEN

- C. PHYSICAL TRAINING. The following lectures on hygiene will be given by head of Home Economics Department. All young women are required to attend. General view on health problems; diet; dress; first aid; care of sick; special lectures. ROCKWOOD.
Free-hand gymnastics, aiming to produce correct posture and to correct faults of posture; athletic movements aiming at grace; folk games. BURNS.

PLANT LIFE AND HORTICULTURE

- A. PLANT LIFE. Taught with special reference to plants of interest to the northern Minnesota farmer. Seeds and plants of the common weeds are studied, classified, and identified. Special emphasis is placed upon various methods of weed eradication. MCCALL.
- B. FLORICULTURE. Study of flowers, with special reference to planting, growing, and propagation. Considerable time spent on grouping and planting of ornamental flowers and shrubs and making landscape planting plans. Station greenhouses supply material for laboratory work. MCCALL.
- C. FRUIT AND VEGETABLE CROPS:
- (1) FRUIT GROWING. Importance of farm orchard and small-fruit garden is emphasized. Field work consists of a study of orchard soils, planting and cultural methods, propagation, pruning, spraying, harvesting, marketing, selection of varieties of native and hardy fruits. MCCALL.
 - (2) VEGETABLE GARDENING. The value of the home vegetable garden, preparation of the ground, and selection of plants and seeds are given attention. Includes tillage, rotation, transplanting, preparation and care of hotbeds, and insects dangerous to the garden. MCCALL.
 - (3) POTATO CULTURE. The importance of the potato as a crop for Minnesota is recognized in this laboratory course. Includes the study of potato soils; seed selection, growing the crop, harvesting, storing, marketing, diseases and their control. MCCALL.
- D. FARM FORESTRY. Why, how, when, and where to plant windbreaks and wood lots is taught; also characteristics and adaptability of the more common trees; methods of propagation, and the conservation of planted and natural forests. MCCALL.
- E. PLANT BREEDING. The factors which cause plants to vary are studied, together with the fundamental principles underlying the breeding and development of plants. Practice work in crossing plants is given in the experiment station greenhouse. MCCALL.

HOME PROJECTS

The work consists of practical work on the home farm in following up studies taken at the school during the winter. The projects selected must be submitted for approval before March 1. Regular reports of the progress of the summer work are required each month. Some one connected with the school and experiment station will inspect the work at least once during the summer. Suggestions regarding the work will be given, and the progress made will be noted. Students will receive credit for this work to apply on the work required for graduation.

Every student residing on a home farm is required to do some home project work during the summer vacation between his first and second years, and between his second and third years.

Students not residing on a home farm during these vacations shall be required to do special practical work as approved by superintendent, in lieu of these summer practicums.

From one to three hours of credit will be given for the work satisfactorily completed each summer, depending upon the nature of the project and the manner in which it is carried out. The reports of the best summer practicum work will be published in a school circular with the rank secured by each student.

SPECIAL COURSES

A few students are unable to enter in the fall or are unable to attend school for the three years. In order to provide for such students, the course of study for the first year has been so arranged that new students may take the regular work and complete a course of study, beginning January 3, 1921.

DRESSMAKERS

Two three months' courses, beginning in October, 1920, and January, 1921, are offered. Each student drafts, cuts, fits, and finishes dresses and garments of various kinds. Beginning students are taught to make their own garments and those who have had some experience, to become dressmakers.

JUNIOR SHORT COURSE

The ninth annual junior short course from April 4 to April 8, 1921, is open to boys and girls from 12 to 18 years of age. With the exception of \$3.00 for board, there is no expense connected with the course. The course aims to deepen the interest of boys and girls in life on the farm. Special emphasis is placed on boys' and girls' club work. Instruction is given for the planning and carrying out of work in such projects and contests as gardening, corn and potato growing, pig, calf, and chicken raising, cooking, sewing, and canning. Illustrated lectures, moving pictures of educational value, games, singing, and excursions add interest and pleasure to the course.

NORTHWEST SCHOOL FARMERS' AND WOMEN'S WEEK

A short course for farmers was organized at this school in 1911 to meet the needs of men and women who wish to study the problems of the farm and the home. The exhibit of farm crops in connection with the course was the origin of the annual farm crops show held at Crookston during the second week in February. A five days' meeting at this time with strong programs for both men and women serves the purpose of the original short course.

NORTHWEST EXPERIMENT STATION

Substation of Department of Agriculture, University of Minnesota

ROSCOE W. THATCHER, M.A., Director

ANDREW BOSS, Vice-Director

CROOKSTON STATION STAFF

C. G. SELVIG, M.A., Superintendent

C. E. BROWN, Poultry

T. M. MCCALL, B.S.A., Horticulture and Potato Investigations

A. M. FOKER, Farm Buildings, Drainage

R. R. SMITH, B.S., Agronomy and Farm Management

A. M. CHRISTENSEN, B.S., Home Projects and Pure Seed Specialists

W. V. GOUSSEFF, B.S., Animal and Dairy Husbandry

A. J. KITTELSON, Assistant State Boys' and Girls' Club Leader

CORA PAULSBERG, Accountant

The Northwest Experiment Station was established in 1895 to investigate agricultural conditions in northwestern Minnesota and to acquire and diffuse among the people of this section practical results from these investigations. The station contains 480 acres and is one mile north of the city. The land is extremely low and presents a drainage problem of more than usual difficulty. Much valuable information on the subject of farm drainage is being secured.

The station has well-equipped barns and yards. From a small beginning it has acquired valuable stock which is distributed to farmers in every section of the state. The dairy stock, hogs, and poultry from the Northwest Experiment Station have started an interest in high-quality stock in many places. Various feeding experiments are conducted.

With the aid of the federal Department of Agriculture, the Minnesota Experiment Station, St. Paul, and in coöperation with experiment stations in other states and in Canada, the Northwest Station is actively engaged in the production and distribution of pure seed grain, grasses, corn, and potatoes. This work has already demonstrated its value and will grow to be of the greatest importance to this section of the state. Pure, pedigreed seed will be sold to farmers who agree to maintain its purity and quality. The entire area of the station is devoted to this work. This station has begun work which will make it an important corn- and seed-breeding center.

The following outline shows part of the experimental work being done at the station.

DRAINAGE WORK

The influence of tile and open drainage is noted. In addition a record is kept of the results on crop production, weed control, and soil conditions by the drainage system. In order to determine the best kinds of tile for size, strength, depth, and distance apart of the lines, thirty-two kinds of tile are used.

EXTENSION WORK

This work is carried on in livestock, agronomy, farm management, farm engineering, horticulture, forestry, and poultry. Speakers are available for farmers' clubs, short courses, and farmers' institutes. Judges are furnished for county and local fairs as well as for schools. County agents are furnished with every assistance possible in all lines of work in their respective counties.

COÖPERATIVE WORK WITH FARMERS, STUDENTS, AND ALUMNI

The work in this department consists in distribution to farmers in northwestern Minnesota of improved strains of seeds of cereals, forage crops, root and vegetable crops, and hardy varieties of trees grown at this station, and recording results. Alfalfa seed has been distributed to 629 farms, pure-bred seeds were placed on 250 farms in 1918 and 175 plots were grown in coöperation with the Station in 1919 in 14 counties of the Red River Valley. One variety of wheat, Mindum 470, that was given out in 1919 averaged 21 bushels per acre throughout the valley, as compared with 10 bushels per acre from all other wheats grown under the same conditions and on the same farms. This was due to its high yielding qualities and its marked resistance to rust. Rural schools have been furnished trees upon request. In addition, students carry on home projects and an organization amongst the alumni was recently perfected, the Northwest Experiment Association.

FARM MANAGEMENT COÖPERATORS' WORK IN FARM ACCOUNTING

This work consists in distributing farm account books to farmers who keep actual records of their farm business.

AGRONOMY SECTION

Cultural Methods with Farm Crops

This deals with rate, date, and method of seeding of various crops. Records are also kept of the results of tractor and horse plowing and disking.

Varietal Tests of Farm Crops

This consists in securing varieties best adapted to northwestern Minnesota. Tests have been made with wheat for flour, flax for fiber, and wheat for rust resistance. In the breeding of corn, Minnesota Nos. 13 and 23 and a flint variety are used.

Crop Rotation

In this work the following rotations are practiced: A three-year rotation consisting of corn, wheat, and clover in the sequence given; a five-year rotation of flax, oats, corn, barley, hay, and pasture in sequence given; a six-year rotation of corn, wheat, hay, pasture, oats, and barley in sequence given; a four-year rotation of corn, wheat, hay, and oats; a four-year rotation of corn, wheat, oats, and barley; also continuous crop-

ping of wheat, oats, barley, and corn, and continuous cropping of wheat with eight pounds of clover seeded with the wheat and plowed under.

Fertilizer Tests

These are carried on in coöperation with the Division of Soils, University Farm, St. Paul. One is a three-year rotation of barley, clover, and corn and potatoes with application of nitrogen, potassium, and phosphorus. Another test is a four-year rotation of oats, corn, and potatoes, wheat, and clover with treatments of raw rock phosphate and acid phosphate each with and without manure. Another test is alfalfa treated with gypsum, potassium sulphate, acid sulphate, and a combination of the last two.

Fruit Investigations

Investigations are carried on to determine varieties of apple, crab, plum, and cherry best adapted to Red River Valley conditions and to determine varieties of raspberries, gooseberries, blueberries, high bush cranberries, grapes, and strawberries best adapted to northwestern Minnesota conditions.

Field Root Investigations

The purpose of these investigations is to determine varieties best adapted to our soil and cultural conditions and to determine best method of winter storage of stock carrots, stock rutabagas, stock turnips, and sugar beets.

ANIMAL AND DAIRY HUSBANDRY SECTION

Herd Maintenance and Cost Record

Valuable information regarding feeding, breeding, individual production of animals, cost of keeping, and effects of different kinds of shelter, is secured in studying the animals of the station herd. One project is the study of the influence of overfeeding with protein on the metabolism and on the development of present and future generations by feeding an excess of protein for a month or two during early life, in swine. Comparisons are made of the self-feeder with a feeding standard using peas, milk, barley, and oats, in pig feeding.

POULTRY SECTION

Experiments in artificial versus natural incubation of chickens are carried on to determine whether the tendency of an artificially reared flock to produce chicks subject to white diarrhea (bacillary diarrhea) can be checked by reverting to natural methods of hatching and rearing.

Cockerel fattening experiment is for the purpose of determining whether leghorn cockerels when crate fattened will put on flesh as economically as barred rock cockerels.

Poultry House Construction and Influence

An investigation to determine whether concrete walls are a success in the housing of poultry; to determine if straw stored in the attic overhead will absorb sufficient moisture from the interior to prevent the walls and floors from becoming injuriously damp; to determine to what extent, if any, concrete construction affects winter egg production; and to record the difference in each house.

Egg Preservatives

A comparison of four different methods of preserving eggs is made to determine the best method of preserving eggs for winter use, and to determine the right proportions of water glass (sodium silicate) to water for best results in preserving eggs.

Different feeding experiments are conducted to determine the relative values of cockerels and capons as market fowls and whether breeding geese can successfully be fed on cured alfalfa alone.

BULLETINS OF THE NORTHWEST EXPERIMENT STATION

Installation of an Experimental Drainage System at Crookston, by W.

Robertson and J. T. Stewart. Minn. Agr. Exp. Sta. Bul. 110, 1908. Poultry, by C. E. Brown. Minn. Agr. Exp. Sta. Bul. 119, 1910.

Report of Northwest Experiment Station for 1911 and 1912, by C. G. Selvig. February, 1913.

Two Types of Silos at Northwest Experiment Station, by C. G. Selvig. Minn. Agr. Ext. Div. Bul. 41, 1913.

Crookston Series, vol. 10, no. 1, Report of the Superintendent, 1910-16, Northwest Experiment Station. January, 1917.

Supplement to no. 1, Fruits, Trees, and Shrubs Recommended for Northern Minnesota, by T. M. McCall.

Supplement to no. 1, Building a Farm Poultry House in Northwestern Minnesota, by C. E. Brown.

No. 3, Sow Thistle, by F. L. Kennard. March, 1917.

No. 6, Around the Campus, a booklet containing useful information and illustrated activities of the School and Station. October, 1917.

Report of Northwest Experiment Station, 1917, 1918, by C. G. Selvig. Northwest Experiment Station. May, 1919.

Supplements to 1917, 1918, Northwest Experiment Station Report, Poultry Notes, by C. E. Brown; Pastures and Meadows for Northwestern Minnesota, by C. G. Selvig; Preliminary Report of Yields of the Golden Valley Peat Experimental Fields in 1918, by F. J. Alway and C. G. Selvig.

Report of Northwest Experiment Station, 1919, by C. G. Selvig. Northwest Experiment Station. May, 1920.

Northwest Monthly. A monthly publication of the Northwest School and Station.

Send your name to be added to the mailing list of the Northwest School and Station, Crookston, Minnesota.

SUMMARY OF ATTENDANCE

1919-1920

Regular School Course	Men	Women	Total
Seniors	18	10	28
Juniors	67	19	86
Freshmen	144	41	185
Advanced	2	2
	<hr/>	<hr/>	<hr/>
	229	72	301
Summer School Session, 1919.....	...	50	50
Junior Short Course, 1920.....	89	93	182
	<hr/>	<hr/>	<hr/>
Total	318	215	533

STUDENTS

1919-1920

SENIORS—28

Aakre, Einar, Goodridge
Ahlm, Ellen, Argyle
Andresen, Arthur, St. Paul
Bagge, Henry, Chicago, Illinois
Bengtson, Melvin, Wannaska
Brunnell, Joseph, Crookston
Campion, Morrill, Angus
Edman, Louise, Alvarado
Felber, James, Minneapolis
Flikke, John, Shelly
Gaass, Wanda, Red Lake Falls
Gronner, Agnes, Underwood
Jensen, Laura, Drayton, N. D.
Johnston, Herbert, Angus

Knudson, Ruby, Goodridge
Lovaas, Olga, Plummer
Lundberg, Vivian, Kennedy
Morris, Lucile, Middle River
Narveson, Carl, Twin Valley
Rud, Martin, Viking
Sprung, Walter, Ada
Swiers, John, Bejou
Thorkelson, Joseph, Stephen
Tollefson, Ella, Hatton, N. D.
Tucker, Clarence, Euclid
Tunheim, Willard, Newfolden
Warner, Milton, Warren
Wiberg, Leonard, Lancaster

JUNIORS—86

Anderson, Floyd, Badger
Anderson, Martin, St. Vincent
Anderson, Walter, Clearbrook
Anderson, William, Clearbrook
Arntson, Arthur, Quiring
Austin, Marie, Malung
Bergh, Mable, Gully
Boc, Gunnar, Nielsville
Bursheim, Maurice, Winger
Carlson, Alfred, Hallock
Carlson, Hilmer, Detroit
Edevold, Oscar, Gully
Erickson, Elmer, Twin Valley
Erickson, Gladys, Twin Valley
Erickson, Myrtle, Goodridge
Erie, Alfred, Gonvick
Ferguson, Henry, Clearwater
Flikke, Bena, Shelly
Forder, John, Gatzke
Gibbons, Veral, Crookston
Gilbertson, Clara, Hendrum
Green, Clyde, Plummer
Grignon, Napoleon, Duluth
Gullingsrud, Carl, Kratka
Hallstrom, Harold, Wylie
Hansen, Luella, Shelly
Hanson, Percy, Newfolden
Jensen, Earl, Clearbrook
Jensen, Hope, Clearbrook
Johnson, Joseph, Kratka
Johnson, Otto, Beltrami
Johnston, Wilbur, Angus
Jorgenson, George, Twin Valley
Kappes, John, Badger
Kasberg, Amos, Eldred

Kjallberg, Laura, Wannaska
Kleppe, Leonard, Clearbrook
Knudson, Ray, Goodridge
Knutson, John, Nielsville
Krbechek, Sophie, Erie
Landby, Esther, Swift
Landby, John, Swift
Larson, Bertha, Fertile
Larson, Marie, Argyle
Lee, Archie, Pencer
Lee, Gilmar, Hendrum
Lindahl, Eldred, Hallock
Lindfors, Carl, Fosston
Lindgren, Alma, Clearbrook
Logan, Gladys, Mentor
Logan, Rufus, Ada
Marmorine, Milton, Clearbrook
Melick, Harry, Strathcona
Melick, Roy, Strathcona
Mohn, Thomas, Hillsboro, N. D.
Monson, Kenneth, Orleans
Moses, Jay, Pelican Rapids
Negaard, Ole, Gonvick
Nelson, Egon, Hallock
Norquist, George, Gonvick
Norquist, Victor, Gonvick
Odegaard, Oliver, Ross
Olson, Nobel, Middle River
Olson, Raymond, Stephen
Parks, Joseph, Borup
Perry, Hazel, Crookston
Peyton, Emmett, Collis
Qualley, Henry, Hendrum
Remick, Herbert, Mentor
Reske, Laudy, Oslo

Sather, Edwin, Halstad
 Shosten, Edith, Erie
 Skime, Elmer, Gonvick
 Solberg, Philip, Winger
 Stein, George, Karlstad
 Sunderland, Selmer, Badger
 Swedin, Martin, Grygla
 Thorsen, Knute, Ulen

Torgerson, Agnes, Stephen
 Vesledahl, Lewis, Erskine
 Vesledahl, Mabel, Erskine
 Vick, Albert, Gonvick
 Waale, Thom, Kratka
 Walker, Clayton, Crookston
 Wasick, Stanley, Oslo
 Wheeler, Loring, Crookston

FRESHMEN—185

Aakre, Richard, Goodridge
 Albertson, Edwin, Landa, N. D.
 Amundson, John, East Grand Forks
 Anderson, Arthur, Jelle
 Anderson, Carl, Erskine
 Anderson, Jesse, Erie
 Anderson, Lena, Erskine
 Asp, Ernest, Newfolden
 Austin, Oscar, Malung
 Bakken, Esther, Pinewood
 Bakken, Olaf, Fosston
 Bergebakken, Sigurd, Fosston
 Bjorkman, Marie, Roseau
 Brathovde, Lloyd, Erskine
 Bredlie, Elmer, Eldred
 Brenberg, Lars, Drayton, N. D.
 Brennon, Helmer, Gully
 Briden, Roger, Crookston
 Briden, Una, Crookston
 Brokke, Thelma, Buxton, N. D.
 Bunker, Viola, Naytahwaush
 Carlson, Arthur, Stephen
 Carlson, Clarence, Shelly
 Carlson, Esther, Halstad
 Carlson, Walter, Argyle
 Clementson, Mabel, Fertile
 Clementson, Oscar, Erskine
 Dale, Anna, Fertile
 Dexter, Reuben, Orleans
 Dostal, Mary, Angus
 Dyrdaahl, Edward, Gully
 Eftefield, Alfa, Argyle
 Eftefield, Ingvald, Argyle
 Egeland, Gladys, Nielsville
 Emerson, Louis, Minneapolis
 Engelbrakson, Agnes, Drayton, N. D.
 Engelstad, Clarence, Fertile
 Engelstad, Lars, Thief River Falls
 Engelstad, Ole, Thief River Falls
 Engelstad, Oscar, Nielsville
 Engstrom, Elmer, Holt
 Erickson, Harold, Duluth
 Erickson, Magnus, Erskine
 Evenson, Alma, Climax
 Falland, Fritzof, Halma
 Flikke, Charlotte, Lockhart
 Folden, Hilmer, Holt
 Folvick, Inga, Oslo
 Foster, Elmer, Duxby

Franzman, Alfred, Grygla
 Friday, Norman, Hawley
 Friday, Rosalind, Hawley
 Gardiner, John, Orleans
 Gerlinger, Theodore, Spur
 Gerstner, Ava, Fertile
 Gibbons, Neva, Crookston
 Gilbert, Virgil, Halstad
 Gordon, Celia, Rhoda
 Gordon, Raymond, Rhoda
 Gronner, John, Underwood
 Hagen, Andrew, Erskine
 Hagen, Clara, Erskine
 Hagen, Ernest, Underwood
 Halonen, George, Hazel
 Hedin, Wilhelm, Twin Valley
 Hegstad, Norval, Haug
 Homme, James, Highlanding
 Hood, Curtis, Stephen
 Hunter, Robert, Orleans
 Hvidsten, Andrew, Stephen
 Imsdahl, Fred, Oslo
 Jacobson, Nels, Nielsville
 Jensen, Camby, Badger
 Jensen, Eddie, Drayton, N. D.
 Jensen, Osmund, Rhoda
 Jensen, Peter, Stephen
 Johnson, Anna, Donaldson
 Johnson, Arnold, Wylie
 Johnson, Clarence, Kennedy
 Johnson, Gottfred, Wylie
 Johnson, Jerome, Kennedy
 Johnson, Myrtle, Gonvick
 Kammen, Sigurd, Badger
 Kassa, George, Goodridge
 Keeler, Ethel, Pencer
 Keeler, LeRoy, Pencer
 Kellberg, Helmer, Thief River Falls
 Kilen, Erwin, Kratka
 Kjallberg, John, Roseau
 Knutson, Halvor, Oslo
 Knutson, Myrtle, Thief River Falls
 Kvamme, Bennie, Ada
 Landro, Ingvald, Hendrum
 Larmoe, Stanley, Middle River
 Lee, Clifford, Hendrum
 Lene, Carl, Gary
 Lincoln, Leland, Stephen
 Lofthus, Halbert, Oslo

Lundquist, Elmer, Warren
 Lundquist, Harry, Warren
 Marmorine, Myrtle, Clearbrook
 Marshall, Clifford, Crookston
 Martinson, Edwin, Pencer
 Martinson, Edwin M., Kennedy
 Martinson, Hanna, Kennedy
 Mattson, Herman, Drayton, N. D.
 Mello, Laura, Argyle
 Michalski, Alex, Oslo
 Mikkelsen, John, Lake Park
 Moe, Gerhard, Brooks
 Morberg, Axel, Alvarado
 Mostad, Edgar, Vang, N. D.
 Nabben, Johanna, Thief River Falls
 Nakken, John, Rosewood
 Nelson, Alma, Winger
 Nelson, Emil, Clearbrook
 Neperal, Tillie, East Grand Forks
 Ness, Lloyd, Ada
 Nornes, Halvor, Winger
 Novak, Albin, Angus
 Novak, George, Angus
 Nyberg, Consel, Gully
 Nygaard, Theodore, Gary
 Ohlquist, Maurice, Badger
 Ohrt, Martin, Lake Park
 Oie, Odin, Karlstad
 Olson, Arthur, Twin Valley
 Olson, George, Middle River
 Oswald, Oscar, Warren
 Overland, Anna, Fertile
 Palm, Edwin, Nielsville
 Palm, Mabel, Nielsville
 Paradis, Homer, Terrebonne
 Paulsrud, Magnus, Nielsville
 Pearson, John, Crookston
 Pederson, Levi, Angus
 Pederson, Viola, Angus
 Peterson, Jennie, Stephen
 Peterson, LaVern, Brooks
 Peterson, Leonard, Erskine
 Peterson, Oscar, Clearbrook

Pulkrabek, Gertrude, Angus
 Robillard, Homer, Red Lake Falls
 Roetman, Homer, Badger
 Rohrer, Erwin, Crookston
 Rongen, Alvin, Fertile
 Roningen, Oley, Nielsville
 Roragen, Joubert, Fertile
 Rud, Elof, Radium
 Sandal, Carl, Syre
 Sandal, Elmer, Syre
 Sandem, Esther, Beltrami
 Selvog, Harvey, Warroad
 Sewill, Valley, Angus
 Short, Frank, Angus
 Silness, Theodore, Halma
 Skavdahl, Selmer, Halstad
 Skime, Carl, Gonvick
 Smith, Charles, Minneapolis
 Solberg, Edward, Fertile
 Sorter, Percy, Holt
 Sorvick, Christian, Lake Park
 Spangrud, Carl, Kennedy
 Spangrud, Roy, Kennedy
 Stennes, Oscar, Hendrum
 Stephens, Gerald, St. Hilaire
 Sterton, Jens, Hendrum
 Sundsdahl, Helena, Erie
 Sundsdahl, John, Erie
 Swenson, Gottfred, Kennedy
 Swenson, Morris, Nielsville
 Swenson, Osmund, Thief River Falls
 Tammy, Gust, Iron
 Tangjerd, Paul, Bagley
 Tangjerd, Ralph, Bagley
 Tarvas, Ole, Iron
 Temple, Mildred, Roseau
 Torpet, Minnie, Fertile
 Underdahl, Oles, Outlook, Mont.
 Underdahl, Tolof, Outlook, Mont.
 Vigstol, Nels, Stephen
 Walters, Lawrence, Beltrami
 Welte, Walter, Bagley
 Wicklund, Robert, Pencer

Wold, Milo, Beltrami

ADVANCED—2

Fosshakken, Ella, Fosston

Walker, Grace, Crookston



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